



CITY OF MANTECA

PUBLIC WORKS DEPARTMENT

October 1, 2009

Via Electronic Mail

Mr. Jim Marshall
Senior Engineer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive #200
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SUBJECT: Comments on Modification of Proposed Waste Discharge Requirements National Pollution Discharge Elimination System (NPDES) Permit No. CA0081558–City of Manteca Wastewater Quality Control Facility (WQCF), San Joaquin County.

Dear Mr. Marshall:

The City of Manteca (City) provides the following comments on the modification of proposed waste discharge requirements transmitted via letter from Diana Messina to Phil Govea, dated September 21, 2009. The proposed modifications stem from recent changes in the Central Valley Regional Water Quality Control Board's (Central Valley Water Board) process for selecting hardness values used to calculate the hardness dependent metals criteria for comparison to the corresponding ambient background metals concentration (B) and the maximum effluent concentration (MEC) as part of the reasonable potential analysis (RPA). According to the letter, the Central Valley Water Board now proposes to use the minimum upstream hardness value to calculate hardness dependent metals criteria for both comparisons (B and MEC) in the RPA. The proposal will effect how the RPA is performed for metals with hardness dependent criteria, namely: cadmium, copper, chromium(III), lead, nickel, silver, and zinc.

The City does not agree that the proposed modification is necessary to identify the appropriate hardness value for calculating CTR-hardness dependent criteria. Furthermore, the City does not concur that the proposed modifications are necessary to fulfill requirements of the California Toxics Rule (CTR), the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Plan, SIP), or the State Water Resources Control Board Order No. 2008-0008 (City of Davis). The reasonable potential analysis (RPA) set forth in Section 1.3 of the SIP is "...to determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective." The modification proposed by the Central Valley Water Board effectively solely considers the metals

concentration in the effluent for assessing reasonable potential and not the discharge, which is comprised of both metals and hardness. Because the metals criteria at issue are hardness dependent, the hardness levels of the discharge will affect the receiving water criteria in all areas of the receiving water affected by the discharge. For the case of greater hardness in the discharge than the upstream receiving water all areas affected by the discharge will have higher hardness based criteria than the upstream receiving water. The opposite case of lower hardness in the discharge than the upstream receiving water, results in lower hardness based criteria for all areas of the receiving water affected by the discharge. Sole consideration of the upstream receiving water hardness does not consider the affect of the discharge on the receiving water, and thus is not assessing whether the discharge may cause, have reasonable potential to cause, or contribute to an excursion above applicable receiving water criteria for the metals at issue.

In Step 1 of the RPA as specified in Section 1.3 of the SIP, the Central Valley Water Board is to first determine the lowest water quality criterion (C). For the hardness dependent metals, the most stringent criteria are the equations specified in the CTR, namely:

$$CMC = WER \times CF_{acute} \times \exp(m_A \cdot \ln\{H\} + b_A)$$

$$CCC = WER \times CF_{chronic} \times \exp(m_C \cdot \ln\{H\} + b_C)$$

Where: WER = site specific water effects ratio

CF = conversion factor (either acute or chronic)

H = hardness

m_A, b_A, m_C, b_C = metal specific parameters (either A = acute, or C = chronic)

After the criteria are identified they are to be properly adjusted for hardness. Step 4 of the RPA compares the appropriate maximum effluent concentration (MEC) to an appropriately adjusted criterion from Step 1. Step 6 of the RPA compares the appropriate background concentration to the appropriately adjusted criterion from Step 1. The City submits that because the criteria for the hardness dependent metals are the equations listed in the CTR and the RPA specifies the criterion to be properly adjusted in Step 1 that the SIP does allow different hardness concentrations to be considered for criteria calculations when comparing MEC and background concentrations. Furthermore, the City argues that due to the requirement in Section 1.3 of the SIP to evaluate the reasonable potential of the discharge to cause or contribute to receiving water exceedances of water quality criteria, the Central Valley Water Board is obligated to consider the hardness in the effluent as well as the hardness of the receiving water to fully assess reasonable potential. The curve method detailed in the Fact Sheet (p F-21 through F-30 of the revised permit) was developed to fully consider all possible combinations of receiving water and discharge conditions to ensure the calculation of protective criteria for the effluent to both assess reasonable potential and serve, as necessary, as the basis for water quality based effluent limitations. The City requests the Central Valley Water Board use the effluent concentration allowance (ECA) curve method outlined in the Fact Sheet as the most stringent properly adjusted criteria to assess the effluent metals concentration and an appropriate upstream receiving water hardness to calculate criteria to evaluate receiving water concentrations of applicable metals.

The discussion regarding hardness in the Fact Sheet (Section IV.C.2.c) utilizes silver as an example to demonstrate the calculation of the ECA for metals criteria with the concave up shape. There are essentially two cases considered for calculation of the ECA in the Fact Sheet, based on whether or not assimilative capacity is considered. For the case where the assimilative capacity is not considered, the calculated ECA for silver is 2.2 µg/L. In considering the

assimilative capacity of the receiving water the minimum ECA for silver is 2.7 µg/L. In the event the Central Valley Water Board finds reasonable potential for silver in the discharge, the City requests the Central Valley Water Board use an ECA for silver of 2.7 µg/L to determine the effluent limitations.

Also a point of clarification, there appears to be a calculation error in the silver maximum daily effluent limitation (MDEL). Following the SIP steady state method to calculate water quality based effluent limitations (WQBEL), if an acute criterion yields the most stringent long term average and dilution is not considered, the calculated maximum daily effluent limitation (MDEL) will equal the ECA¹. In Table F-16 WQBEL for Silver (p. F-56 of the revised permit), the ECA Multiplier and MDEL Multiplier appear correct, a calculation error exists resulting in the Table listing the MDEL as 2.0 µg/L. The City requests the Central Valley confirm the calculations of the final WQBELs for silver. If the ECA for silver is 2.2 µg/L is used to calculate the water quality based effluent limitations (WQBEL), the MDEL should be 2.2 µg/L as the applicable objective is an acute criterion and dilution is not considered. If the silver ECA of 2.7 µg/L is used in the calculation both the average monthly effluent limitation (AMEL) and MDEL would require recalculation.

The City thanks you for providing a participatory process toward the permit adoption. The City urges the Central Valley Water Board to reconsider the proposed changes in assessing reasonable potential, and instead use the curve method fully discussed in the Fact Sheet (p. F-21 through F-30). If you wish to discuss these comments or other matters, do not hesitate to contact me.

Sincerely,



Phil Govea, P.E.

Deputy Director of Public Works – Utility Engineering

cc: Gayleen Perreira, Regional Water Board
Mark Houghton, City of Manteca
Mack Walker, Larry Walker Associates
Roberta Larson, Somach Simmons & Dunn

¹ For the SIP steady state method, $ECA_{multiplier_{acute99}} = \frac{1}{MDEL_{multiplier_{99}}}$